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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,333	02/13/2002	Kevin P. Baker	PF514P1	4576

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EXAMINER	
O HARA, EILEEN B	
ART UNIT	**PAPER NUMBER**
1646	

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/073,333	BAKER ET AL.	
	Examiner	Art Unit	
	Eileen O'Hara	1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-9,11-19,27 and 29-88* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-9, 11-19, 27 and 29-88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 5-9, 11-19, 27 and 29-88 are pending in the instant application. Claims 1, 8, 9, 13, 19, 27, 62 and 88 have been amended and claims 10 and 20-23 have been canceled as requested by Applicant in the Paper filed Nov. 14, 2003.

Priority

2. Applicants' amendment to the specification to update the status of Application 09/637,856 is acknowledged.

Objection to Specification

3. The objections to the specification are withdrawn in view of Applicants' amendment.

Withdrawn Rejections

4.1 The rejection of claims under 112 § 1 for the biological deposit is withdrawn in view of Applicants' Statement concerning the deposited cDNA clone.

4.2 The rejections of claims under 112 § 2 are withdrawn in view of Applicants' amendment.

4.3 The rejection of claim 9 under 35 USC § 102(b) (section 11.5, Hedge et al.) is withdrawn in view of Applicants' amendment.

Double Patenting

5. Claims 1, 5-9, 11-19, 27 and 29-88 remain provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-19 and 26 of copending Application No. 10/140,164. This is a provisional double patenting rejection since the conflicting claims have not

in fact been patented. Applicants submit that as claims have not been found allowable in either the instant application of Application No. 10/140,164, it is requested that the present rejection be held in abeyance until such time as claims are deemed to be in condition for allowance in either one of the two above-mentioned applications. Applicants' arguments have been fully considered but are not deemed persuasive, and the rejection is maintained.

Claim Rejections - 35 USC § 101 and § 112

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1, 5-9, 11-19, 27 and 29-88 remain rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility, for reasons of record in the previous Office Action, Paper No. 13, at pages 8-13.

Applicants traverse the rejection and assert on pages 19-22 of the response that a rejection under 35 U.S.C. § 101 is improper when a person of ordinary skill in the art would find credible disclosed features of characteristics of the invention, or statements made by the applicant in the written description of the invention, and that in addition, an applicant need only make one credible assertion of utility for the claimed invention to satisfy 35 U.S.C. § 101, and cite M.P.E.P. §§ 2107.02(II), (III) at 2100-[37-40] on page 20. Applicants further assert that finding a lack of utility is also improper if a person of ordinary skill in the art would know of a use for the claimed invention at the time the application was filed and moreover, that the burden

is on the Examiner to establish why it is more likely than not that one of ordinary skill in the art would doubt the truth of the statement of utility, and that the Examiner must provide evidence sufficient to show that the statement of asserted utility would be considered "false" by a person of ordinary skill in the in the art, and that the Examiner must also present countervailing facts and reasoning sufficient to establish that a person of ordinary skill would not believe the applicants' assertion of utility (*In re Brana*).

Applicants on pages 21-22 submit that polynucletides of the invention that encode a TR16 polypeptide have an immediate and specific utility, and may be used to diagnose tumors including B cell leukemias and lymphomas and/or immune system-related disorders, and may also be used to produce TR16 polypeptides, which may then be used to generate antibodies specific for TR16. Applicants also assert that the specification teaches that TR16 is expressed in B cell and spleen, and the polynucleotides of the invention and antibodies can be used to quantitate or qualitate concentration of cells of B cell lineage. Applicants submit that these asserted utilities for TR16 are specific and substantial, and that the general rule is that treatments of specific diseases or conditions meet the criteria of § 101 (M.P.E.P. §§ 2107.01 (III) at 2100-[35-34]), and that these utilities are credible. Applicants submit that they have rebutted the Examiner's showing by proffering sufficient evidence to lead one skilled in the art to conclude that the asserted utilities are more likely than not true.

Applicants' arguments have been fully considered but are not deemed persuasive. For example, use as a diagnostic or therapeutic for the diseases or disorders listed in section [0188] or on pages 135, 187-189, 191-194, 199-207, for example, as asserted by Applicants, would be a specific and substantial use of the polypeptide and/or nucleic acids if a correlation were found

between the molecules of the invention and those diseases or disorders. However, the only correlation supporting the asserted utility is based on expression of the gene in certain cells or tissues (B cells and spleen) and membership in the TNF receptor superfamily. This is not sufficient guidance to the skilled artisan use the claimed polynucleotides or encoded polypeptides or associated antibodies for diagnosis or treatment of diseases. Additionally, the specification teaches [0032] that the TR16 message was detected in multiple human tissues other than those of B cells and spleen, and include brain and testis.

The specification states at section [0190] that "it is believed that certain diseases in mammals with cancer of cells or tissue of the immune system express significantly enhanced or reduced levels of normal or altered TR16-short and/or TR16-long polypeptide and mRNA encoding the TR16-short and/or TR16-long polypeptide when compared to a corresponding "standard" level." A difference in expression levels between normal and disease states would be a specific and substantial utility and would not require knowledge of the activity of the protein. However, there is no data to support that the gene or protein of the instant invention can be used diagnostically in such a manner, or therapeutically. A stated belief that a correlation exists between the polypeptides and any number of diseases is not sufficient guidance to use the claimed polynucleotides to treat and/or diagnose a particular disease; it merely defines a starting point for further research and investigation.

Although homology to the TNF receptor family provides evidence that the claimed protein is a member of the TNF receptor superfamily, it is not predictable that the TR16 nucleic acids or encoded protein could be used diagnostically or therapeutically from this information. Members of this superfamily bind to a large variety of different ligands, mediate different

signals, are expressed in different cell types and modulate different physiological processes, and are involved in different diseases and/or disorders, and it is not predictable what disease or diseases this particular gene may be involved in. One of ordinary skill in the art would not find that the use of this particular gene or encoded protein for diagnosis or therapeutic use is more likely than not true.

Applicants' arguments that the treatments of specific diseases or conditions meet the criteria of asserted utility 35 U.S.C. § 101 as described on page 6 of the Revised Interim Utility Guidelines Training Materials is not deemed persuasive. Although the Training Materials state "For example, both a therapeutic method of treating a known or newly discovered disease and an assay method for identifying compounds that themselves have a "substantial utility" define a "real world" context of use.", the Training Materials also state "Utilities that require or constitute carrying out further research to identify or reasonably confirm a "real world" context of use are not substantial utilities." The polynucleotides and polypeptides of the instant invention would require substantial further research to determine if they were involved in any disease state. However, applicants have not demonstrated any correlation between the polypeptide of the instant invention and any of the diseases or disorders listed in the specification. Any such therapeutic use is based on homology of the T16 polypeptide to a Tumor Necrosis Factor Receptor.

The proposed use of the claimed invention is simply a starting point for further research and investigation into practical uses of the polynucleotide and/or protein. This further experimentation is a useful in basic research, but does not constitute a specific, substantial or

well-established utility. For these reasons and those of record in the previous Office Actions, the rejection under 35 USC § 101 is maintained.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7.1 Claims 1, 5-9, 11-19, 27 and 29-88 also remain rejected under 35 U.S.C. 112, first paragraph, for reasons of record in the previous Office Action, at pages 13-14. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention. Even if the specification were enabling of how to use the TR16 polypeptide (or nucleic acid), enablement would not be found commensurate in scope with the claims. If one of skill in the art does not know how to use the nucleic acids or proteins the skilled artisan would clearly not know how to use nucleic acid molecules comprising a polynucleotide having a nucleotide sequence at least 95% identical to a nucleotide sequence encoding polypeptides that are 95% identical to the polypeptides of SEQ ID NO: 2 or 4 or encoding polypeptides comprising the specifically recited domains or epitope-bearing portions thereof.

Applicants traverse the rejection and submit on page 23 of the response that as the asserted utilities of the invention meet the statutory requirement set forth is 35 USC § 101and that armed with the specification of the instant invention, one skilled in the art clearly would

know how to use the claimed invention. Applicants' arguments have been fully considered but are not deemed persuasive, since the claims remain rejected under 35 USC § 101.

7.2 Claims 1, 8, 9, 11-19, 27, 29, 30, 33, 36, 39, 42, 45, 48-60, 62, 63, 65, 67, 69, 71, 73 and 75-87 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants traverse the rejection and submit on pages 24-28 of the response that in an analysis of written description under 35 U.S.C. § 112, first paragraph, the Examiner bears the initial burden of presenting a *prima facie* case of unpatentability, and that the Examiner has not meet this burden. Applicants cite *in re Wertheim, Amgen, Inc. v. Chugai Pharmaceutical Co., Vas-Cath Inc. v. Muhurkar, Union Oil Company of California v. Atlantic Richfield Company and University of California v. Eli Lilly*, as support for their position that one skilled in the art could reasonably conclude that the inventor had possession of the claimed invention based on the specification as filed, and that all of the objectives met by a generic chemical formula are similarly met by the explicit description in the instant specification of a polynucleotide sequence (SEQ ID NO: 1 or SEQ ID NO: 3) and the amino acid sequenceas encoded thereby (SEQ ID NO: 2 or SEQ ID NO: 4), and by the instant claims to polynucleotides at least 95% identical to polynucleotides comprising amino acid sequences of SEQ ID NOS: 2 and 4, and polynucleotides encoding polypeptides comprising amino acid sequences at least 95% identical to amino acid sequences of SEQ ID NOS: 2 and 4. Applicants further argue that the instant claims clearly

distinguish the boundaries of the claimed genera and identify all of the members of those genera, and that one skilled in the art would reasonably conclude that Applicants had possession of the polynucleotides encompassed by the rejected claims upon reading the present application as filed, and has provided a description sufficient to allow the skilled artisan to easily substitute a nucleic acid codon encoding any given amino acid, or add or delete codons, such that nothing more than what is described in the specification would be required to identify every single one of the the polynucleotides at least 95% identical to polynucleotides encoding polypeptides comprising amino acid sequences of SEQ ID NOS: 2 and 4, or polynucleotides encoding polypeptides comprising amino acid sequences at least 95% identical to amino acid sequences of SEQ ID NOS: 2 and 4.

Applicants' arguments have been fully considered but are not deemed persuasive. Under the Guidelines for Examination of Patent Applications under 35 U.S.C. § 112, first paragraph, "Written Description", a representative species may be adequately described through its structure, through its functional characteristics, or through a combination of its structure and function. In the instant case the claims encompass polynucleotides at least 95% identical to polynucleotides comprising amino acid sequences of SEQ ID NOS: 2 and 4, and polynucleotides encoding polypeptides comprising amino acid sequences at least 95% identical to amino acid sequences of SEQ ID NOS: 2 and 4. There is no functional limitation in the claims, and some of the claims require only a very small amount of structure. For example, claim 9 only requires that the isolated nucleic acid comprises a polynucleotide which encodes the amino acid sequence of an eptiope-bearing portion comprising at least 10 amino acid residues of a TR16 receptor. The claims do not provide adequate structure or function to meet the written description guidelines.

Priority

8. Applicants traverse the effective priority date of the instant application on pages 30-32 of the response, and provide the same arguments presented in the response to the rejection under 35 U.S.C. 101 on pages 19-22, and asserts that the earliest provisional application to which the present application claims priority under 35 U.S.C. 119(e) (60/148,348) teaches that TR16 is a novel member of the Tumor Necrosis Factor receptor family, that TNF receptor family members are expressed by a variety of cells including lymphocytes, are involved in the regulation of proliferation and/or death of these cells, and that TR16 polynucleotides of the invention are useful in the diagnosis of a disease which results from altered expression of TR16 or a soluble form thereof, and that these asserted utilities, having been credible at the time of filing, are sufficient to constitute a showing of utility as required under 35 U.S.C. 101.

Applicants' arguments have been fully considered but are not deemed persuasive, for the reasons discussed in the rejection under 35 U.S.C. 101 and 112, first paragraph, in the previous Office Action and the current Office Action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9.1 Claims 8 and 9 remain rejected under 35 U.S.C. 102(b) as being anticipated by Shimkets et al., WO 00/78802, December 28, 2000, for reasons of record in the previous Office action, at page 20.

9.2 Claims 8 and 9 remain rejected under 35 U.S.C. 102(e) as being anticipated by Shimkets et al., US Patent Application Publication No. US20030032095A1, filing date Nov. 2, 2001, for reasons of record in the previous Office action, at page 20-21.

9.3 Claims 8 and 9 remain rejected under 35 U.S.C. 102(a) as being anticipated by Tashiro et al., EMBL/GenBank/DDBJ databases, Accession No. AK055902, December 1, 2001, for reasons of record in the previous Office action, at page 21.

9.4 Claims 8 and 9 remain rejected under 35 U.S.C. 102(b) as being anticipated by Hedge et al., et al., Database EST, Accession No. AW954806, June 1, 2000, for reasons of record in the previous Office action, at page 21-22.

Applicants traverse the rejections, and asset that the correct effective priority, date of the present application is August 12, 1999, and therefore the teachings of the above references do not qualify as prior art against the present application under 35 U.S.C. 102.

Applicants' arguments have been fully considered but are not deemed persuasive, because the effective priority date of the instant application is maintained as Feb. 13, 2002, as discussed above under Priority.

It is believed that all pertinent arguments have been answered.

Conclusion

12. No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eileen B. O'Hara, whose telephone number is (571) 272-0878. The examiner can normally be reached on Monday through Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached at (571) 272-0871.

Official papers Before Final filed by RightFax should be directed to (703) 872-9306.

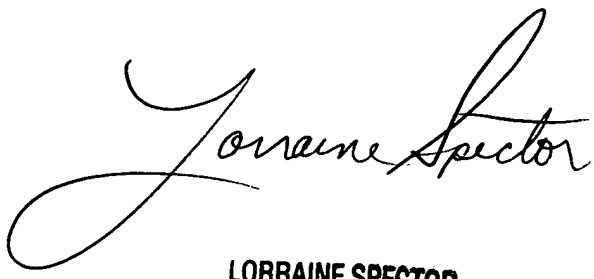
Official papers After Final filed by RightFax should be directed to (703) 872-9307.

Official papers filed by fax should be directed to (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Eileen B. O'Hara, Ph.D.

Patent Examiner



LORRAINE SPECTOR
PRIMARY EXAMINER